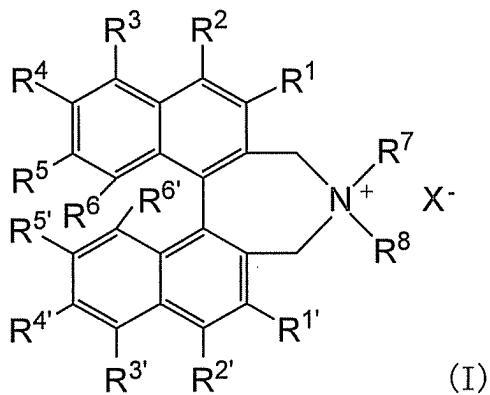


AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A compound represented by the following formula (I) below:



wherein R^1 , $R^{1'}$, R^2 , $R^{2'}$, R^3 , $R^{3'}$, R^4 , $R^{4'}$, R^5 , $R^{5'}$, R^6 , and $R^{6'}$ are groups independently selected from the group consisting of :

- (i) a hydrogen atom;
- (ii) $-NR^{20}R^{21}$ (where R^{20} and R^{21} are each independently a hydrogen atom or a C_1 to C_4 alkyl group);
- (iii) a cyano group;
- (iv) a nitro group;
- (v) a carbamoyl group;
- (vi) an $N-(C_1$ to C_4 alkyl)carbamoyl group;
- (vii) an N,N -di(C_1 to C_4 alkyl)carbamoyl group;
- (viii) $-NHCOR^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched);
- (ix) a C_1 to C_6 alkyl group that may be branched or form a cyclic group;

(x) a C₂ to C₆ alkenyl group that may be branched or form a cyclic group;

(xi) a C₂ to C₆ alkynyl group that may be branched or form a cyclic group;

(xii) an aralkyl group, wherein the aryl moiety of the aralkyl group may be substituted with at least one group selected from the group consisting of:

- a C₁ to C₄ alkyl group that may be branched,
- a C₁ to C₅ alkoxy group that may be branched,
- an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),
- a cyano group,
- NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
- a nitro group,
- a carbamoyl group,
- an N-(C₁ to C₄ alkyl)carbamoyl group,
- an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
- NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

and

- a halogen atom;

(xiii) a heteroaralkyl group having a heteroaryl moiety, wherein the heteroaryl moiety may be substituted with at least one group selected from the group consisting of:

- a C₁ to C₄ alkyl group that may be branched,
- a C₁ to C₅ alkoxy group that may be branched,
- an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

and

a halogen atom;
(xiv) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), a halogen atom, and
~~-S(O)_n-R, -S-R, -SO-R, or -SO₂-R~~ (where n is 0, 1 or 2, and R is a C₁ to C₄ alkyl group that may be branched); or may be substituted with ~~-O-(CH₂)_m-O-~~ ~~-O-CH₂-O-~~ or ~~-O-(CH₂)₂-O-~~ (where m is 1 or 2) at positions 3 and 4 taken together; and

(xv) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

and

a halogen atom;

R⁷ and R⁸ are groups independently selected from the group consisting of:

- (i) a hydrogen atom;
- (ii) a C₁ to C₁₂ alkyl group that may be branched or form a cyclic group;
- (iii) a C₂ to C₁₂ alkenyl group that may be branched or form a cyclic group;

(iv) a C₂ to C₁₂ alkynyl group that may be branched or form a cyclic group;

(v) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

and

a halogen atom;

(vi) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄

alkyl)carbamoyl group, or $-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched),

a cyano group,

$-\text{NR}^{20}\text{R}^{21}$ (where R^{20} and R^{21} are each independently a hydrogen atom or a C_1 to C_4 alkyl group),

a nitro group,

a carbamoyl group,

an $\text{N}-(\text{C}_1$ to C_4 alkyl)carbamoyl group,

an N,N -di(C_1 to C_4 alkyl)carbamoyl group,

$-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched),

and

a halogen atom;

(vii) $-(\text{CH}_2)_n\text{OCONR}^{10}\text{R}^{14}-(\text{CH}_2)_p\text{OCONR}^{10}\text{R}^{11}$ (where R^{10} and R^{11} are groups independently selected from the group consisting of:

(1) a hydrogen atom;

(2) a C_1 to C_4 alkyl group that may be branched;

(3) a C_2 to C_6 alkenyl group that may be branched or form a cyclic group;

(4) a C_2 to C_6 alkynyl group that may be branched or form a cyclic group;

(5) an aralkyl group, wherein the aryl moiety of the aralkyl group may be substituted with at least one group selected from the group consisting of:

a C_1 to C_4 alkyl group that may be branched,

a C_1 to C_5 alkoxy group that may be branched,

an aryl group that may be substituted with a C_1 to C_4 alkyl group that may be branched, a cyano group, $-\text{NR}^{20}\text{R}^{21}$ (where R^{20} and R^{21} are each independently a hydrogen atom or a C_1 to C_4 alkyl group), a nitro group, a carbamoyl group, an $\text{N}-(\text{C}_1$ to C_4 alkyl)carbamoyl group, an N,N -di(C_1 to C_4 alkyl)carbamoyl group, or $-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

(6) a heteroaralkyl group having a heteroaryl moiety, wherein the heteroaryl moiety may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

(7) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

and

(8) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

and p [[n]] is an integer from 1 to 12);

(viii) $-(CH_2)_nCONR^{12}R^{13}-(CH_2)_qCONR^{12}R^{13}$ (where R¹² and R¹³ are groups independently selected from the group consisting of:

- (1) a hydrogen atom;
- (2) a C₁ to C₄ alkyl group that may be branched;

(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
 -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

and q [[n]] is an integer from 1 to 12);

(ix) -(CH₂)_RNR¹²COR¹³ -(CH₂)_rNR¹²COR¹³ (where R¹² and R¹³ are groups independently selected from the group consisting of:

(1) a hydrogen atom;

(2) a C₁ to C₄ alkyl group that may be branched;

(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),
a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and
a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),
a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

and r [[n]] is an integer from 1 to 12);

(x) $-(\text{CH}_2)_n \text{NR}^{12} \text{R}^{13} - (\text{CH}_2)_s \text{NR}^{12} \text{R}^{13}$ (where R¹² and R¹³ are groups independently selected from the group consisting of:

- (1) a hydrogen atom;
- (2) a C₁ to C₄ alkyl group that may be branched;

(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

and s [[n]] is an integer from 1 to 12);

(xi) ~~-(CH₂)_nY-OR¹²-(CH₂)_lY-OR¹²~~ (where Y is a C₁ to C₄ divalent saturated hydrocarbon group that may be branched, and R¹² is a group selected from the group consisting of:

(1) a hydrogen atom;

(2) a C₁ to C₄ alkyl group that may be branched;

(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

and t [[n]] is an integer from 1 to 12);

(xii) $-(\text{CH}_2)_n-\text{OR}^{12}-\underline{(\text{CH}_2)_u-\text{OR}^{12}}$ (where R¹² is a group selected from the group consisting of:

(1) a hydrogen atom;

(2) a C₁ to C₄ alkyl group that may be branched;

(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

and u [[n]] is an integer from 1 to 12);

(xiii) -(CH₂)_n-S-R¹²-(CH₂)_v-S-R¹² (where R¹² is a group selected from the group consisting of:

(1) a hydrogen atom;

(2) a C₁ to C₄ alkyl group that may be branched;

(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each

independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

$-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched), and

a halogen atom;

and $\underline{y} \, [[n]]$ is an integer from 1 to 12);

(xiv) $-(\text{CH}_2)_n-\text{SO}-\text{R}^{12}-\underline{(\text{CH}_2)_w-\text{SO}-\text{R}^{12}}$ (where R^{12} is a group selected from the group consisting of:

(1) a hydrogen atom;

(2) a C_1 to C_4 alkyl group that may be branched;

(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C_1 to C_4 alkyl group that may be branched,

a C_1 to C_5 alkoxy group that may be branched,

an aryl group that may be substituted with a C_1 to C_4 alkyl group that may be branched, a cyano group, $-\text{NR}^{20}\text{R}^{21}$ (where R^{20} and R^{21} are each independently a hydrogen atom or a C_1 to C_4 alkyl group), a nitro group, a carbamoyl group, an $\text{N}-(\text{C}_1$ to C_4 alkyl)carbamoyl group, an N,N -di(C_1 to C_4 alkyl)carbamoyl group, or $-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched),

a cyano group,

$-\text{NR}^{20}\text{R}^{21}$ (where R^{20} and R^{21} are each independently a hydrogen atom or a C_1 to C_4 alkyl group),

a nitro group,

a carbamoyl group,

an $\text{N}-(\text{C}_1$ to C_4 alkyl)carbamoyl group,

an N,N -di(C_1 to C_4 alkyl)carbamoyl group,

$-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched), and

a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C_1 to C_4 alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;
and w [[n]] is an integer from 1 to 12); and

(xv) -(CH₂)_n-SO₂-R¹² -(CH₂)_x-SO₂-R¹² (where R¹² is a group selected from the group consisting of:

(1) a hydrogen atom;
(2) a C₁ to C₄ alkyl group that may be branched;
(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄

alkyl)carbamoyl group, or $-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched),

a cyano group,

$-\text{NR}^{20}\text{R}^{21}$ (where R^{20} and R^{21} are each independently a hydrogen atom or a C_1 to C_4 alkyl group),

a nitro group,

a carbamoyl group,

an $\text{N}-(\text{C}_1$ to C_4 alkyl)carbamoyl group,

an N,N -di(C_1 to C_4 alkyl)carbamoyl group,

$-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched), and

a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C_1 to C_4 alkyl group that may be branched,

a C_1 to C_5 alkoxy group that may be branched,

an aryl group that may be substituted with a C_1 to C_4 alkyl group that may be branched, a cyano group, $-\text{NR}^{20}\text{R}^{21}$ (where R^{20} and R^{21} are each independently a hydrogen atom or a C_1 to C_4 alkyl group), a nitro group, a carbamoyl group, an $\text{N}-(\text{C}_1$ to C_4 alkyl)carbamoyl group, an N,N -di(C_1 to C_4 alkyl)carbamoyl group, or $-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched),

a cyano group,

$-\text{NR}^{20}\text{R}^{21}$ (where R^{20} and R^{21} are each independently a hydrogen atom or a C_1 to C_4 alkyl group),

a nitro group,

a carbamoyl group,

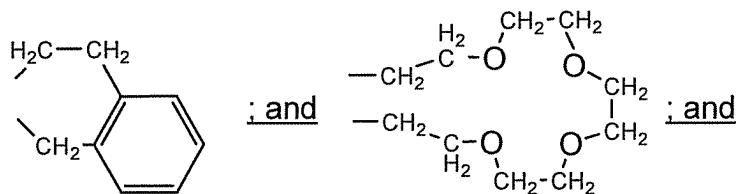
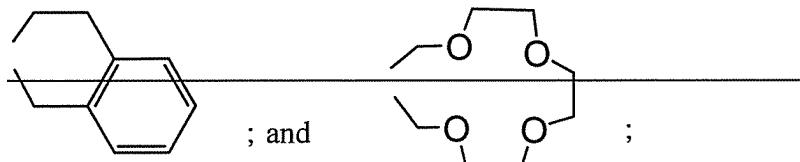
an $\text{N}-(\text{C}_1$ to C_4 alkyl)carbamoyl group,

an N,N -di(C_1 to C_4 alkyl)carbamoyl group,

$-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched), and

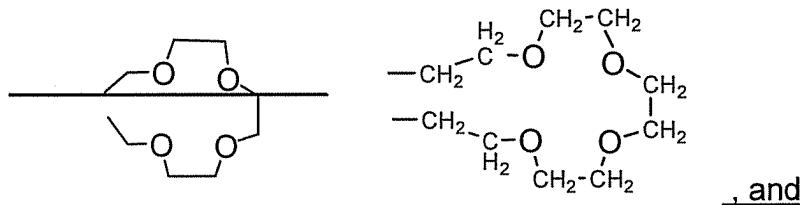
a halogen atom;

and $x [[n]]$ is an integer from 1 to 12); or R^7 and R^8 are taken together to form a divalent group selected from the group consisting of: $-(CH_2)_m$ (where m is an integer from 2 to 8);



wherein X⁻ is an anion selected from the group consisting of a halide anion, SCN⁻, HSO₄⁻ and HF₂⁻

provided that in a case where R^1 , $R^{1'}$, R^2 , $R^{2'}$, R^3 , $R^{3'}$, R^4 , $R^{4'}$, R^5 , $R^{5'}$, R^6 , and $R^{6'}$ are all hydrogen atoms and X^- is a halide anion, R^7 and R^8 are not both methyl groups, a combination of a methyl group and an n-butyl group, a combination of a methyl group and an isopropyl group, or a combination of an allyl group and a hydrogen atom, or R^7 and R^8 are not taken together to form - $(CH_2)_4$ -, - $(CH_2)_5$ - or



further provided that in a case where R¹, R^{1'}, R², R^{2'}, R³, R^{3'}, R⁴, R^{4'}, R⁵, R^{5'}, R⁶, and R^{6'} are all hydrogen atoms and X⁻ is a bromide ion or an iodide ion, R⁷ and R⁸ are not both cyclohexyl groups or allyl groups.

2. (Currently amended) The compound of claim 1, wherein R¹, R^{1'}, R², R^{2'}, R³, R^{3'}, R⁴, R^{4'}, R⁵, R^{5'}, R⁶, and R^{6'} of the compound represented by the formula (I) are groups independently selected from the group consisting of:

- (i) a hydrogen atom;
- (xiv) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:
 - a C₁ to C₄ alkyl group that may be branched,
 - a C₁ to C₅ alkoxy group that may be branched,
 - an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),
 - a cyano group,
 - NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
 - a nitro group,
 - a carbamoyl group,
 - an N-(C₁ to C₄ alkyl)carbamoyl group,
 - an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
 - NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),
 - a halogen atom, and
 - ~~-S(O)_n-R -S-R, -SO-R, or -SO₂-R (where n is 0, 1 or 2, and R is a C₁ to C₄ alkyl group that may be branched);~~

or may be substituted with $-\text{O}-(\text{CH}_2)_m-\text{O}-$ $-\text{O}-\text{CH}_2-\text{O}-$ or $-\text{O}-(\text{CH}_2)_2-\text{O}-$ (where m is 1 or 2) at positions 3 and 4 taken together; and

(xv) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, $-\text{NR}^{20}\text{R}^{21}$ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or $-\text{NHCOR}^9$ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

$-\text{NR}^{20}\text{R}^{21}$ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

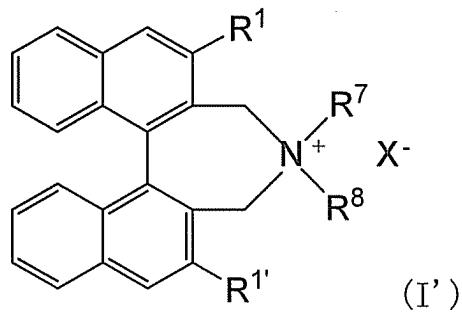
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

$-\text{NHCOR}^9$ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom.

3. (Original) The compound of claim 2, wherein R¹, R^{1'}, R², R^{2'}, R³, R^{3'}, R⁴, R^{4'}, R⁵, R^{5'}, R⁶, and R^{6'} of the compound represented by the formula (I) are groups independently selected from the group consisting of a hydrogen atom, a 3,4,5-trifluorophenyl group, a 3,4,5-trichlorophenyl group, a 3,4-difluorophenyl group, a 3-nitrophenyl group, a 3-cyanophenyl group, a benzothiophenyl-2-yl group, a 3,5-difluorophenyl group, a 3-trifluoromethylphenyl group, a 2,4-difluorophenyl group, a 3-methylsulfonylphenyl group, and a 2,3-bis(trifluoromethyl)phenyl group.

4. (Currently amended) The compound of claim [3] 1, wherein the compound represented by the formula (I) is a compound represented by the following formula (I'):



(where R¹ and R^{1'} are groups independently selected from the group consisting of a hydrogen atom, a 3,4,5-trifluorophenyl group, a 3,4,5-trichlorophenyl group, a 3,4-difluorophenyl group, a 3-nitrophenyl group, a 3-cyanophenyl group, a benzothiophenyl-2-yl group, a 3,5-difluorophenyl group, a 3-trifluoromethylphenyl group, a 2,4-difluorophenyl group, a 3-methylsulfonylphenyl group, and a 2,3-bis(trifluoromethyl)phenyl group, and R⁷, R⁸ and X⁻ are groups independently as defined in claim 1).

5. (Currently amended) The compound of claim 1, wherein R⁷ and R⁸ of the compound represented by the formula (I) are groups independently selected from the group consisting of:

(ii) a C₁ to C₁₂ alkyl group that may be branched or form a cyclic group; and

(xii) -(CH₂)_n-OR¹² -(CH₂)_u-OR¹² (where R¹² is a group selected from the group consisting of:

(1) a hydrogen atom,
 (2) a C₁ to C₄ alkyl group that may be branched,
 (3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom, and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

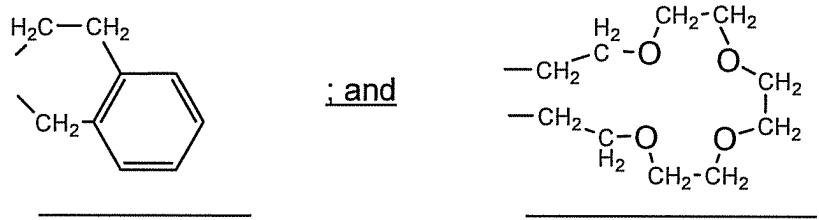
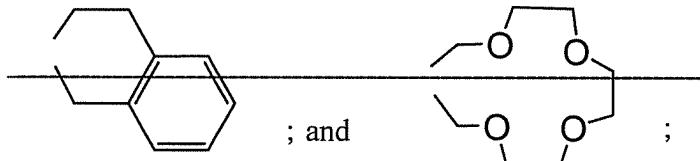
a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,

a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and
a halogen atom,
and u [[n]] is an integer of 1 to 12).

6. (Original) The compound of claim 5, wherein R⁷ and R⁸ of the compound represented by the formula (I) are groups independently selected from the group consisting of a methyl group, an ethyl group, an n-butyl group, an isobutyl group, an n-decyl group, and a cyclohexyl group.

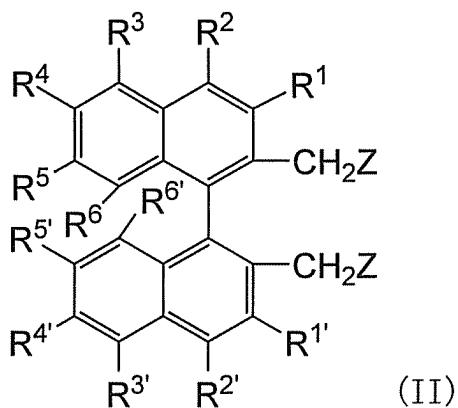
7. (Original) The compound of claim 6, wherein R⁷ and R⁸ of the compound represented by the formula (I) are the same.

8. (Currently amended) The compound of claim 1, wherein R⁷ and R⁸ of the compound represented by the formula (I) are taken together to form a divalent group selected from the group consisting of: -(CH₂)_m- (where m is an integer from 2 to 8);

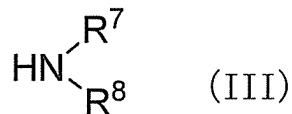


9. (Currently amended) A method for producing the compound represented by the formula (I) of claim 1, comprising:

a step of reacting a compound represented by the following formula (II):



with a secondary amine represented by the following formula (III):



in an organic solvent in the presence of an acid scavenging agent,

wherein in the formula (II), R¹, R^{1'}, R², R^{2'}, R³, R^{3'}, R⁴, R^{4'}, R⁵, R^{5'}, R⁶, and R^{6'} are groups independently selected from the group consisting of:

- (i) a hydrogen atom;
- (ii) -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group);
- (iii) a cyano group;
- (iv) a nitro group;
- (v) a carbamoyl group;
- (vi) an N-(C₁ to C₄ alkyl)carbamoyl group;
- (vii) an N,N-di(C₁ to C₄ alkyl)carbamoyl group;
- (viii) -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched);
- (ix) a C₁ to C₆ alkyl group that may be branched or form a cyclic group;

(x) a C₂ to C₆ alkenyl group that may be branched or form a cyclic group;

(xi) a C₂ to C₆ alkynyl group that may be branched or form a cyclic group;

(xii) an aralkyl group, wherein the aryl moiety of the aralkyl group may be substituted with at least one group selected from the group consisting of:

- a C₁ to C₄ alkyl group that may be branched,
- a C₁ to C₅ alkoxy group that may be branched,
- an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),
- a cyano group,
- NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
- a nitro group,
- a carbamoyl group,
- an N-(C₁ to C₄ alkyl)carbamoyl group,
- an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
- NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

and

- a halogen atom;

(xiii) a heteroaralkyl group having a heteroaryl moiety, wherein the heteroaryl moiety may be substituted with at least one group selected from the group consisting of:

- a C₁ to C₄ alkyl group that may be branched,
- a C₁ to C₅ alkoxy group that may be branched,
- an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each

independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

 a cyano group,
 -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

 a nitro group,
 a carbamoyl group,
 an N-(C₁ to C₄ alkyl)carbamoyl group,
 an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
 -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

and

 a halogen atom;
 (xiv) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

 a C₁ to C₄ alkyl group that may be branched,
 a C₁ to C₅ alkoxy group that may be branched,
 an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

 a cyano group,
 -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
 a nitro group,
 a carbamoyl group,
 an N-(C₁ to C₄ alkyl)carbamoyl group,
 an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),
 a halogen atom, and
~~-S(O)_n-R~~ ~~-S-R~~, ~~-SO-R~~, or ~~-SO₂-R~~ (where n is 0, 1 or 2, and R is a C₁ to C₄ alkyl group that may be branched);
 or may be substituted with ~~-O-(CH₂)_m-O-~~ ~~-O-CH₂-O-~~ or ~~-O-(CH₂)₂-O-~~ (where m is 1 or 2) at positions 3 and 4 taken together; and

(xv) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
 a C₁ to C₅ alkoxy group that may be branched,
 an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),
 a cyano group,
~~-NR²⁰R²¹~~ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
 a nitro group,
 a carbamoyl group,
 an N-(C₁ to C₄ alkyl)carbamoyl group,
 an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
~~-NHCOR⁹~~ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

and

a halogen atom;
 and
 Z is a halogen atom, and
 in the formula (III), R⁷ and R⁸ are groups independently selected from the group consisting of:
 (i) a hydrogen atom;

- (ii) a C₁ to C₁₂ alkyl group that may be branched or form a cyclic group;
- (iii) a C₂ to C₁₂ alkenyl group that may be branched or form a cyclic group;
- (iv) a C₂ to C₁₂ alkynyl group that may be branched or form a cyclic group;
- (v) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:
 - a C₁ to C₄ alkyl group that may be branched,
 - a C₁ to C₅ alkoxy group that may be branched,
 - an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),
 - a cyano group,
 - NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
 - a nitro group,
 - a carbamoyl group,
 - an N-(C₁ to C₄ alkyl)carbamoyl group,
 - an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
 - NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),
- and
- a halogen atom;

- (vi) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:
 - a C₁ to C₄ alkyl group that may be branched,
 - a C₁ to C₅ alkoxy group that may be branched,
 - an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

and

a halogen atom;

(vii) $-(CH_2)_nOCONR^{10}R^{14}-(CH_2)_pOCONR^{10}R^{11}$ (where R¹⁰ and R¹¹ are each independently a group selected from the group consisting of:

(1) a hydrogen atom;

(2) a C₁ to C₄ alkyl group that may be branched;

(3) a C₂ to C₆ alkenyl group that may be branched or form a cyclic group ;

(4) a C₂ to C₆ alkynyl group that may be branched or form a cyclic group ;

(5) an aralkyl group, wherein the aryl moiety of the aralkyl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄

alkyl)carbamoyl group, or $-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched),

a cyano group,

$-\text{NR}^{20}\text{R}^{21}$ (where R^{20} and R^{21} are each independently a hydrogen atom or a C_1 to C_4 alkyl group),

a nitro group,

a carbamoyl group,

an $\text{N}-(\text{C}_1$ to C_4 alkyl)carbamoyl group,

an N,N -di(C_1 to C_4 alkyl)carbamoyl group,

$-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched), and

a halogen atom;

(6) a heteroaralkyl group having a heteroaryl moiety, wherein the heteroaryl moiety may be substituted with at least one group selected from the group consisting of:

a C_1 to C_4 alkyl group that may be branched,

a C_1 to C_5 alkoxy group that may be branched,

an aryl group that may be substituted with a C_1 to C_4 alkyl group that may be branched, a cyano group, $-\text{NR}^{20}\text{R}^{21}$ (where R^{20} and R^{21} are each independently a hydrogen atom or a C_1 to C_4 alkyl group), a nitro group, a carbamoyl group, an $\text{N}-(\text{C}_1$ to C_4 alkyl)carbamoyl group, an N,N -di(C_1 to C_4 alkyl)carbamoyl group, or $-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched),

a cyano group,

$-\text{NR}^{20}\text{R}^{21}$ (where R^{20} and R^{21} are each independently a hydrogen atom or a C_1 to C_4 alkyl group),

a nitro group,

a carbamoyl group,

an $\text{N}-(\text{C}_1$ to C_4 alkyl)carbamoyl group,

an N,N -di(C_1 to C_4 alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

(7) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

and

(8) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a

carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

and p [[n]] is an integer from 1 to 12);

(viii) $-(CH_2)_pCONR^{12}R^{13}-(CH_2)_qCONR^{12}R^{13}$ (where R¹² and R¹³ are groups independently selected from the group consisting of:

(1) a hydrogen atom;

(2) a C₁ to C₄ alkyl group that may be branched;

(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,
 a carbamoyl group,
 an N-(C₁ to C₄ alkyl)carbamoyl group,
 an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
 -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

and g [[n]] is an integer from 1 to 12);

(ix) $-\text{CH}_2\text{NR}^{12}\text{COR}^{13}-\text{CH}_2\text{NR}^{12}\text{COR}^{13}$ (where R¹² and R¹³ are groups independently selected from the group consisting of:

(1) a hydrogen atom;

(2) a C₁ to C₄ alkyl group that may be branched;

(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

- a C₁ to C₄ alkyl group that may be branched,
- a C₁ to C₅ alkoxy group that may be branched,
- an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),
- a cyano group,
- NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
- a nitro group,
- a carbamoyl group,
- an N-(C₁ to C₄ alkyl)carbamoyl group,
- an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
- NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and
- a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

- a C₁ to C₄ alkyl group that may be branched,
- a C₁ to C₅ alkoxy group that may be branched,
- an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and
a halogen atom;

and r [[n]] is an integer from 1 to 12);

(x) -(CH₂)_nNR¹²R¹³ -(CH₂)_sNR¹²R¹³ (where R¹² and R¹³ are groups independently selected from the group consisting of:

- (1) a hydrogen atom;
- (2) a C₁ to C₄ alkyl group that may be branched;
- (3) an aryl group, wherein the aryl group may be substituted with

at least one group selected from the group consisting of:

- a C₁ to C₄ alkyl group that may be branched,
- a C₁ to C₅ alkoxy group that may be branched,
- an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

- a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

and s [[n]] is an integer from 1 to 12);

(xi) ~~-(CH₂)_nY-OR¹² -(CH₂)_tY-OR¹²~~ (where Y is a C₁ to C₄ divalent saturated hydrocarbon group that may be branched, and R¹² is a group selected from the group consisting of:

(1) a hydrogen atom;

(2) a C₁ to C₄ alkyl group that may be branched;

(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

and t [[n]] is an integer from 1 to 12);

(xii) $-(CH_2)_n-OR^{12}-\underline{(CH_2)_u-OR^{12}}$ (where R¹² is a group selected from the group consisting of:

(1) a hydrogen atom;

(2) a C₁ to C₄ alkyl group that may be branched;

(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

$-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched), and

a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C_1 to C_4 alkyl group that may be branched,

a C_1 to C_5 alkoxy group that may be branched,

an aryl group that may be substituted with a C_1 to C_4 alkyl group that may be branched, a cyano group, $-\text{NR}^{20}\text{R}^{21}$ (where R^{20} and R^{21} are each independently a hydrogen atom or a C_1 to C_4 alkyl group), a nitro group, a carbamoyl group, an N -(C_1 to C_4 alkyl)carbamoyl group, an N,N -di(C_1 to C_4 alkyl)carbamoyl group, or $-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched),

a cyano group,

$-\text{NR}^{20}\text{R}^{21}$ (where R^{20} and R^{21} are each independently a hydrogen atom or a C_1 to C_4 alkyl group),

a nitro group,

a carbamoyl group,

an N -(C_1 to C_4 alkyl)carbamoyl group,

an N,N -di(C_1 to C_4 alkyl)carbamoyl group,

$-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched), and

a halogen atom;

and \underline{u} $[[n]]$ is an integer from 1 to 12);

(xiii) $-(\text{CH}_2)_n-\text{S}-\text{R}^{12}-\underline{(\text{CH}_2)_v-\text{S}-\text{R}^{12}}$ (where R^{12} is a group selected from the group consisting of:

(1) a hydrogen atom;

(2) a C_1 to C_4 alkyl group that may be branched;

(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C_1 to C_4 alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,

a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

and \underline{v} [[n]] is an integer from 1 to 12);

(xiv) $-(\text{CH}_2)_n-\text{SO}-\text{R}^{12}-\underline{(\text{CH}_2)_w-\text{SO}-\text{R}^{12}}$ (where R¹² is a group selected from the group consisting of:

- (1) a hydrogen atom;
- (2) a C₁ to C₄ alkyl group that may be branched;
- (3) an aryl group, wherein the aryl group may be substituted with

at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

and w [[n]] is an integer from 1 to 12); and

(xv) $-(CH_2)_n-SO_2-R^{12}-\underline{(CH_2)_x-SO_2-R^{12}}$ (where R¹² is a group selected from the group consisting of:

(1) a hydrogen atom;

(2) a C₁ to C₄ alkyl group that may be branched;

(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each

independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

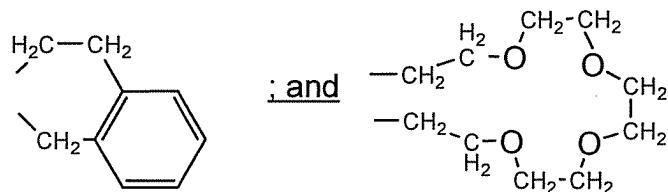
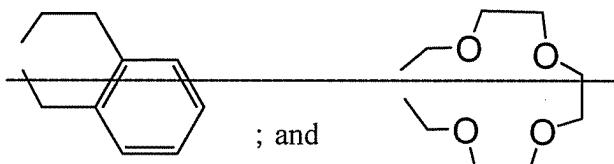
an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

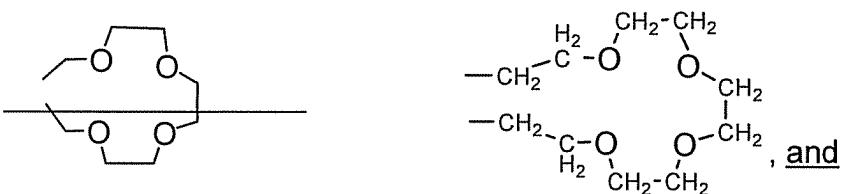
$-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched), and

a halogen atom;

and $[[n]] \text{x}$ is an integer from 1 to 12); or R^7 and R^8 are taken together to form a divalent group selected from the group consisting of: $-(\text{CH}_2)_m-$ (where m is an integer from 2 to 8);



provided that in a case where $\text{R}^1, \text{R}^{1'}, \text{R}^2, \text{R}^{2'}, \text{R}^3, \text{R}^{3'}, \text{R}^4, \text{R}^{4'}, \text{R}^5, \text{R}^{5'}, \text{R}^6$, and $\text{R}^{6'}$ are all hydrogen atoms and X^- is a halide anion, R^7 and R^8 are not both methyl groups, a combination of a methyl group and an n-butyl group, a combination of a methyl group and an isopropyl group, or a combination of an allyl group and a hydrogen atom, or R^7 and R^8 are not taken together to form $-(\text{CH}_2)_4-$, $-(\text{CH}_2)_5-$ or



further provided that in a case where $\text{R}^1, \text{R}^{1'}, \text{R}^2, \text{R}^{2'}, \text{R}^3, \text{R}^{3'}, \text{R}^4, \text{R}^{4'}, \text{R}^5, \text{R}^{5'}, \text{R}^6$, and $\text{R}^{6'}$ are all hydrogen atoms and X^- is a bromide ion or an iodide ion, R^7 and R^8 are not both cyclohexyl groups or allyl groups.

10. (Currently amended) The method of claim 9, wherein R¹, R^{1'}, R², R^{2'}, R³, R^{3'}, R⁴, R^{4'}, R⁵, R^{5'}, R⁶, and R^{6'} of the compound represented by the formula (II) are groups independently selected from the group consisting of:

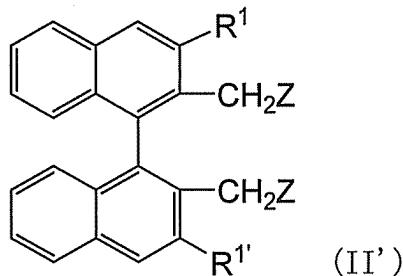
- (i) a hydrogen atom;
- (xiv) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:
 - a C₁ to C₄ alkyl group that may be branched,
 - a C₁ to C₅ alkoxy group that may be branched,
 - an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),
 - a cyano group,
 - NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
 - a nitro group,
 - a carbamoyl group,
 - an N-(C₁ to C₄ alkyl)carbamoyl group,
 - an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
 - NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),
 - a halogen atom, and
 - ~~-S(O)_n-R~~ ~~-S-R~~, ~~-SO-R~~, or ~~-SO₂-R~~ (where n is 0, 1 or 2, and R is a C₁ to C₄ alkyl group that may be branched);
 - or may be substituted with ~~-O-(CH₂)_m-O-~~ ~~-O-CH₂-O-~~ or ~~-O-(CH₂)₂-O-~~ (where m is 1 or 2) at positions 3 and 4 taken together; and
 - (xv) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:
 - a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and
a halogen atom.

11. (Original) The method of claim 10, wherein R¹, R^{1'}, R², R^{2'}, R³, R^{3'}, R⁴, R^{4'}, R⁵, R^{5'}, R⁶, and R^{6'} of the compound represented by the formula (II) are groups independently selected from the group consisting of a hydrogen atom, a 3,4,5-trifluorophenyl group, a 3,4,5-trichlorophenyl group, a 3,4-difluorophenyl group, a 3-nitrophenyl group, a 3-cyanophenyl group, a benzothiophenyl-2-yl group, a 3,5-difluorophenyl group, a 3-trifluoromethylphenyl group, a 2,4-difluorophenyl group, a 3-methylsulfonylphenyl group, and a 2,3-bis(trifluoromethyl)phenyl group.

12. (Currently amended) The method of claim [11] 9, wherein the compound represented by the formula (II) is a compound represented by the following formula (II'):



(where R^1 and $R^{1'}$ are groups independently selected from the group consisting of a hydrogen atom, a 3,4,5-trifluorophenyl group, a 3,4,5-trichlorophenyl group, a 3,4-difluorophenyl group, a 3-nitrophenyl group, a 3-cyanophenyl group, a benzothiophenyl-2-yl group, a 3,5-difluorophenyl group, a 3-trifluoromethylphenyl group, a 2,4-difluorophenyl group, a 3-methylsulfonylphenyl group, and a 2,3-bis(trifluoromethyl)phenyl group, and R^7 , R^8 and Z are groups independently as defined in claim 9).

13. (Currently amended) The method of claim 9, wherein R^7 and R^8 of the secondary amine represented by the formula (II) (III) are groups independently selected from the group consisting of:

(ii) a C_1 to C_{12} alkyl group that may be branched or form a cyclic group; and

(xii) $-(CH_2)_n-OR^{12}-CH_2)_u-OR^{12}$ (where R^{12} is a group selected from the group consisting of:

(1) a hydrogen atom,

(2) a C_1 to C_4 alkyl group that may be branched,

(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C_1 to C_4 alkyl group that may be branched,

a C_1 to C_5 alkoxy group that may be branched,

an aryl group that may be substituted with a C_1 to C_4 alkyl group that may be branched, a cyano group, $-NR^{20}R^{21}$ (where R^{20} and R^{21} are each independently a hydrogen atom or a C_1 to C_4 alkyl group), a nitro group, a

carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom, and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

$-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched), and

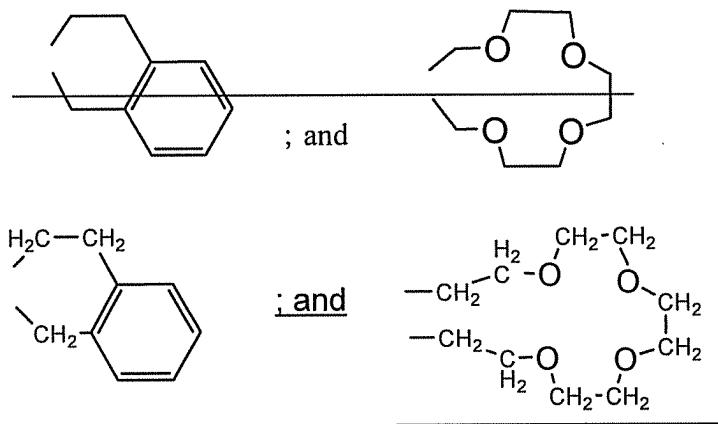
a halogen atom,

and u $[[n]]$ is an integer of 1 to 12).

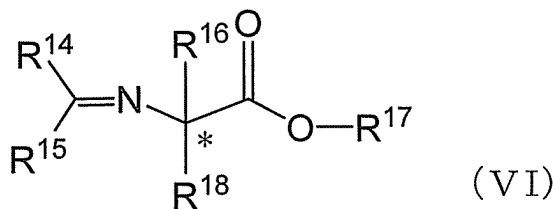
14. (Currently amended) The method of claim 13, wherein R^7 and R^8 of the secondary amine represented by the formula (II) (III) are groups independently selected from the group consisting of a methyl group, an ethyl group, an n-butyl group, an isobutyl group, an n-decyl group, and a cyclohexyl group.

15. (Currently amended) The method of claim 14, wherein R^7 and R^8 of the secondary amine represented by the formula (II) (III) are the same.

16. (Currently amended) The method of claim 9, wherein R^7 and R^8 of the secondary amine represented by the formula (II) (III) are taken together to form a divalent group selected from the group consisting of: $-(\text{CH}_2)_m-$ $-(\text{CH}_2)_y-$ (where y $[[m]]$ is an integer from 2 to 8);

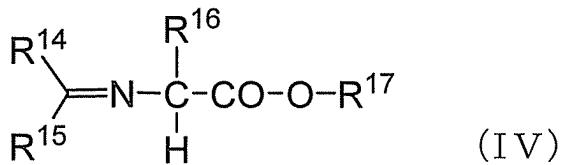


17. (Withdrawn) A method for stereoselectively producing a compound represented by the formula (VI):



comprising:

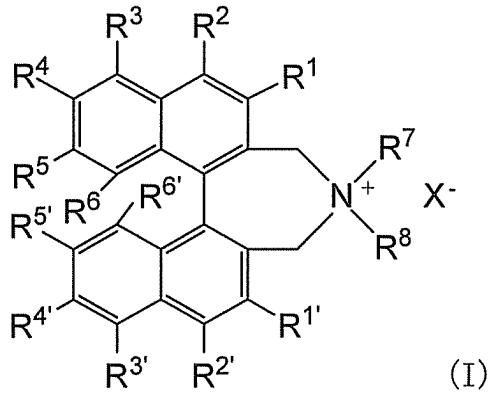
alkylating a compound represented by the formula (IV)



with a compound of the formula (V):



using a compound represented by the formula (I) that is pure with respect to axis symmetry as a phase-transfer catalyst:



in a medium in the presence of an inorganic base,

wherein in the formula (I), R^1 , R^1' , R^2 , R^2' , R^3 , R^3' , R^4 , R^4' , R^5 , R^5' , R^6 , and R^6' are groups independently selected from the group consisting of:

- (i) a hydrogen atom;
- (ii) $-\text{NR}^{20}\text{R}^{21}$ (where R^{20} and R^{21} are each independently a hydrogen atom or a C_1 to C_4 alkyl group);
- (iii) a cyano group;
- (iv) a nitro group;

- (v) a carbamoyl group;
- (vi) an N-(C₁ to C₄ alkyl)carbamoyl group;
- (vii) an N,N-di(C₁ to C₄ alkyl)carbamoyl group;
- (viii) -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched);
- (ix) a C₁ to C₆ alkyl group that may be branched or form a cyclic group;
- (x) a C₂ to C₆ alkenyl group that may be branched or form a cyclic group;
- (xi) a C₂ to C₆ alkynyl group that may be branched or form a cyclic group;
- (xii) an aralkyl group, wherein the aryl moiety of the aralkyl group may be substituted with at least one group selected from the group consisting of:
 - a C₁ to C₄ alkyl group that may be branched,
 - a C₁ to C₅ alkoxy group that may be branched,
 - an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),
 - a cyano group,
 - NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
 - a nitro group,
 - a carbamoyl group,
 - an N-(C₁ to C₄ alkyl)carbamoyl group,
 - an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
 - NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

and

- a halogen atom;

(xiii) a heteroaralkyl group having a heteroaryl moiety, wherein the heteroaryl moiety may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),
a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

and

a halogen atom;

(xiv) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),
a halogen atom, and
-S(O)_n-R (where n is 0, 1 or 2, and R is a C₁ to C₄ alkyl group that may be branched);
or may be substituted with -O-(CH₂)_m-O- (where m is 1 or 2) at positions 3 and 4 taken together; and

(xv) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom; and

R⁷ and R⁸ are each independently a monovalent organic group or are taken together to form a divalent organic group,

X- is a halide anion,

in the formulae (IV) and (VI),

R¹⁴ and R¹⁵ are each independently

(i) a hydrogen atom; or

(ii) an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a C₁ to C₅ alkoxy group that may be branched, or a halogen atom;

with the proviso the case where both R¹⁴ and R¹⁵ are hydrogen atoms is excluded,

R¹⁶ is a group selected from the group consisting of:

(i) a hydrogen atom;

(ii) a C₁ to C₁₀ alkyl group that may be branched or form a cyclic group;

(iii) a C₂ to C₆ alkenyl group that may be branched or form a cyclic group;

(iv) a C₂ to C₆ alkynyl group that may be branched or form a cyclic group;

(v) an aralkyl group, wherein the aryl group of the aralkyl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

and

a halogen atom;
(vi) a heteroaralkyl group having a heteroaryl moiety, wherein the heteroaryl moiety may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

and

a halogen atom;

(vii) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),
a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

and

a halogen atom; and

(viii) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),
a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

and

a halogen atom;

R¹⁷ is a C₁ to C₈ alkyl group that may be branched or form a cyclic group),

in the formulae (V) and (VI),

R¹⁸ is a group selected from the group consisting of:

(i) a C₁ to C₁₀ alkyl group that may be branched or form a cyclic group;

(ii) a C₃ to C₉ allyl group or substituted allyl group that may be branched or form a cyclic group;

(iii) a C₂ to C₆ alkenyl group that may be branched or form a cyclic group;

(iv) a C₂ to C₆ alkynyl group that may be branched or form a cyclic group;

(v) an aralkyl group, wherein the aryl moiety of the aralkyl group may be substituted with at least one group selected from the group consisting of;

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

and

a halogen atom;
(vi) a heteroaralkyl group having a heteroaryl moiety, wherein the heteroaryl moiety may be substituted with at least one group selected from the group

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

and

a halogen atom;
(vii) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of;
a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

and

a halogen atom;
(viii) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,

a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),
and
a halogen atom; and
(ix) a C₃ to C₉ propargyl group or substituted propargyl group that may be branched, and
in the formula (V),
W is a functional group having a leaving ability, and
in the formula (VI),
* shows a newly produced asymmetric center.

18. (Withdrawn) The method of claim 17, wherein R⁷ and R⁸ of the compound represented by the formula (I) are groups independently selected from the group consisting of:

- (i) a C₁ to C₁₂ alkyl group that may be branched or form a cyclic group and/or may be substituted with a halogen atom;
- (ii) a C₂ to C₁₂ alkenyl group that may be branched or form a cyclic group and/or may be substituted with a halogen atom;
- (iii) a C₂ to C₁₂ alkynyl group that may be branched or form a cyclic group and/or may be substituted with a halogen atom;
- (iv) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:
 - a C₁ to C₄ alkyl group that may be branched,
 - a C₁ to C₅ alkoxy group that may be branched,
 - an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄

alkyl)carbamoyl group, or $-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched),

a cyano group,

$-\text{NR}^{20}\text{R}^{21}$ (where R^{20} and R^{21} are each independently a hydrogen atom or a C_1 to C_4 alkyl group),

a nitro group,

a carbamoyl group,

an $\text{N}-(\text{C}_1$ to C_4 alkyl)carbamoyl group,

an N,N -di(C_1 to C_4 alkyl)carbamoyl group,

$-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched),

and

a halogen atom;

(v) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C_1 to C_4 alkyl group that may be branched,

a C_1 to C_5 alkoxy group that may be branched,

an aryl group that may be substituted with a C_1 to C_4 alkyl group that may be branched, a cyano group, $-\text{NR}^{20}\text{R}^{21}$ (where R^{20} and R^{21} are each independently a hydrogen atom or a C_1 to C_4 alkyl group), a nitro group, a carbamoyl group, an $\text{N}-(\text{C}_1$ to C_4 alkyl)carbamoyl group, an N,N -di(C_1 to C_4 alkyl)carbamoyl group, or $-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched),

a cyano group,

$-\text{NR}^{20}\text{R}^{21}$ (where R^{20} and R^{21} are each independently a hydrogen atom or a C_1 to C_4 alkyl group),

a nitro group,

a carbamoyl group,

an $\text{N}-(\text{C}_1$ to C_4 alkyl)carbamoyl group,

an N,N -di(C_1 to C_4 alkyl)carbamoyl group,

$-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched),

and

a halogen atom;

(vi) $-(\text{CH}_2)_n\text{OCONR}^{10}\text{R}^{11}$ (where R^{10} and R^{11} are groups independently selected from the group consisting of:

(1) a hydrogen atom;

(2) a C_1 to C_4 alkyl group that may be branched;

(3) a C_2 to C_6 alkenyl group that may be branched or form a cyclic group;

(4) a C_2 to C_6 alkynyl group that may be branched or form a cyclic group;

(5) an aralkyl group, wherein the aryl moiety of the aralkyl group may be substituted with at least one group selected from the group consisting of:

a C_1 to C_4 alkyl group that may be branched,

a C_1 to C_5 alkoxy group that may be branched,

an aryl group that may be substituted with a C_1 to C_4 alkyl group that may be branched, a cyano group, $-\text{NR}^{20}\text{R}^{21}$ (where R^{20} and R^{21} are each independently a hydrogen atom or a C_1 to C_4 alkyl group), a nitro group, a carbamoyl group, an $\text{N}-(\text{C}_1$ to C_4 alkyl)carbamoyl group, an N,N -di(C_1 to C_4 alkyl)carbamoyl group, or $-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched),

a cyano group,

$-\text{NR}^{20}\text{R}^{21}$ (where R^{20} and R^{21} are each independently a hydrogen atom or a C_1 to C_4 alkyl group),

a nitro group,

a carbamoyl group,

an $\text{N}-(\text{C}_1$ to C_4 alkyl)carbamoyl group,

an N,N -di(C_1 to C_4 alkyl)carbamoyl group,

$-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched), and

a halogen atom;

(6) a heteroaralkyl group having a heteroaryl moiety, wherein the heteroaryl moiety may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

(7) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom; and

(8) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

and n is an integer from 1 to 12);

(vii) $-(\text{CH}_2)_n\text{CONR}^{12}\text{R}^{13}$ (where R^{12} and R^{13} are groups independently selected from the group consisting of:

(1) a hydrogen atom;

(2) a C_1 to C_4 alkyl group that may be branched;

(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C_1 to C_4 alkyl group that may be branched,

a C_1 to C_5 alkoxy group that may be branched,

an aryl group that may be substituted with a C_1 to C_4 alkyl group that may be branched, a cyano group, $-\text{NR}^{20}\text{R}^{21}$ (where R^{20} and R^{21} are each independently a hydrogen atom or a C_1 to C_4 alkyl group), a nitro group, a carbamoyl group, an $\text{N}-(\text{C}_1$ to C_4 alkyl)carbamoyl group, an $\text{N,N-di}(\text{C}_1$ to C_4 alkyl)carbamoyl group, or $-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched),

a cyano group,

$-\text{NR}^{20}\text{R}^{21}$ (where R^{20} and R^{21} are each independently a hydrogen atom or a C_1 to C_4 alkyl group),

a nitro group,

a carbamoyl group,

an $\text{N}-(\text{C}_1$ to C_4 alkyl)carbamoyl group,

an $\text{N,N-di}(\text{C}_1$ to C_4 alkyl)carbamoyl group,

$-\text{NHCOR}^9$ (where R^9 is a C_1 to C_4 alkyl group that may be branched), and

a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C_1 to C_4 alkyl group that may be branched,

a C_1 to C_5 alkoxy group that may be branched,

an aryl group that may be substituted with a C_1 to C_4 alkyl group that may be branched, a cyano group, $-\text{NR}^{20}\text{R}^{21}$ (where R^{20} and R^{21} are each independently a hydrogen atom or a C_1 to C_4 alkyl group), a nitro group, a

carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

and n is an integer from 1 to 12);

(viii) -(CH₂)_nNR¹²COR¹³ (where R¹² and R¹³ are groups independently selected from the group consisting of:

(1) a hydrogen atom;

(2) a C₁ to C₄ alkyl group that may be branched;

(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

and n is an integer from 1 to 12);

(ix) -(CH₂)_nNR¹²R¹³ (where R¹² and R¹³ are groups independently selected from the group consisting of:

(1) a hydrogen atom;

(2) a C₁ to C₄ alkyl group that may be branched;
(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and
a halogen atom;

and n is an integer from 1 to 12);

(x) -(CH₂)_nY-OR¹² (where Y is a C₁ to C₄ divalent saturated hydrocarbon group that may be branched, and R¹² is a group selected from the group consisting of:

(1) a hydrogen atom;
(2) a C₁ to C₄ alkyl group that may be branched;
(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

and n is an integer from 1 to 12);

(xi) -(CH₂)_n-OR¹² (where R¹² is a group selected from the group consisting of:

(1) a hydrogen atom;

(2) a C₁ to C₄ alkyl group that may be branched;

(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

and n is an integer from 1 to 12);

(xii) -(CH₂)_n-S-R¹² (where R¹² is a group selected from the group consisting of:

(1) a hydrogen atom;

(2) a C₁ to C₄ alkyl group that may be branched;

(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

and n is an integer from 1 to 12);

(xiii) -(CH₂)_n-SO-R¹² (where R¹² is a group selected from the group consisting of:

(1) a hydrogen atom;

(2) a C₁ to C₄ alkyl group that may be branched;

(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,

a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

and n is an integer from 1 to 12); and

(xiv) -(CH₂)_n-SO₂-R¹² (where R¹² is a group selected from the group consisting of:

(1) a hydrogen atom;

(2) a C₁ to C₄ alkyl group that may be branched;

(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom; and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

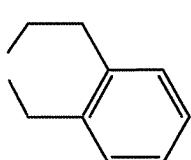
an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

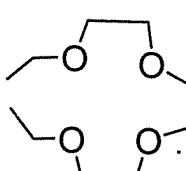
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom;

and n is an integer from 1 to 12; or R⁷ and R⁸ are taken together to form a divalent group selected from the group consisting of: -(CH₂)_m- (where m is an integer from 2 to 8);



; and



19. (Withdrawn) The method of claim 18, wherein R¹, R^{1'}, R², R^{2'}, R³, R^{3'}, R⁴, R^{4'}, R⁵, R^{5'}, R⁶, and R^{6'} of the compound represented by the formula (I) are groups independently selected from the group consisting of:

(i) a hydrogen atom;

(xiv) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),
a cyano group,
-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),
a nitro group,
a carbamoyl group,
an N-(C₁ to C₄ alkyl)carbamoyl group,
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,
-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),
a halogen atom, and
-S(O)_n-R (where n is 0, 1 or 2, and R is a C₁ to C₄ alkyl group that may be branched);
or may be substituted with -O-(CH₂)_m-O- (where m is 1 or 2) at positions 3 and 4 taken together; and

(xv) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,
a C₁ to C₅ alkoxy group that may be branched,
an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a

carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

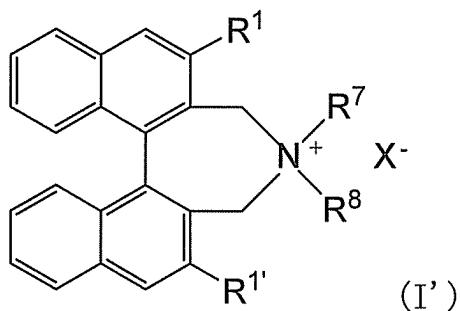
an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom.

20. (Withdrawn) The method of claim 19, wherein R¹, R^{1'}, R², R^{2'}, R³, R^{3'}, R⁴, R^{4'}, R⁵, R^{5'}, R⁶, and R^{6'} of the compound represented by the formula (I) are groups independently selected from the group consisting of a hydrogen atom, a 3,4,5-trifluorophenyl group, a 3,4,5-trichlorophenyl group, a 3,4-difluorophenyl group, a 3-nitrophenyl group, a 3-cyanophenyl group, a benzothiophenyl-2-yl group, a 3,5-difluorophenyl group, a 3-trifluoromethylphenyl group, a 2,4-difluorophenyl group, a 3-methylsulfonylphenyl group, and a 2,3-bis(trifluoromethyl)phenyl group.

21. (Withdrawn) The method of claim 20, wherein the compound represented by the formula (I) is a compound represented by the following formula (I'):



(where R^1 and $R^{1'}$ are groups independently selected from the group consisting of a hydrogen atom, a 3,4,5-trifluorophenyl group, a 3,4,5-trichlorophenyl group, a 3,4-difluorophenyl group, a 3-nitrophenyl group, a 3-cyanophenyl group, a benzothiophenyl-2-yl group, a 3,5-difluorophenyl group, a 3-trifluoromethylphenyl group, a 2,4-difluorophenyl group, a 3-methylsulfonylphenyl group, and a 2,3-bis(trifluoromethyl)phenyl group, and R^7 , R^8 and X^- are groups independently as defined in claim 17).

22. (Withdrawn) The method of claim 17, wherein R^7 and R^8 of the compound represented by the formula (I) are groups independently selected from the group consisting of:

(ii) a C_1 to C_{12} alkyl group that may be branched or form a cyclic group; and

(xii) $-(CH_2)_n-OR^{12}$ (where R^{12} is a group selected from the group consisting of:

(1) a hydrogen atom,

(2) a C_1 to C_4 alkyl group that may be branched,

(3) an aryl group, wherein the aryl group may be substituted with at least one group selected from the group consisting of:

a C_1 to C_4 alkyl group that may be branched,

a C_1 to C_5 alkoxy group that may be branched,

an aryl group that may be substituted with a C_1 to C_4 alkyl group that may be branched, a cyano group, $-NR^{20}R^{21}$ (where R^{20} and R^{21} are each

independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

a halogen atom, and

(4) a heteroaryl group, wherein the heteroaryl group may be substituted with at least one group selected from the group consisting of:

a C₁ to C₄ alkyl group that may be branched,

a C₁ to C₅ alkoxy group that may be branched,

an aryl group that may be substituted with a C₁ to C₄ alkyl group that may be branched, a cyano group, -NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group), a nitro group, a carbamoyl group, an N-(C₁ to C₄ alkyl)carbamoyl group, an N,N-di(C₁ to C₄ alkyl)carbamoyl group, or -NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched),

a cyano group,

-NR²⁰R²¹ (where R²⁰ and R²¹ are each independently a hydrogen atom or a C₁ to C₄ alkyl group),

a nitro group,

a carbamoyl group,

an N-(C₁ to C₄ alkyl)carbamoyl group,

an N,N-di(C₁ to C₄ alkyl)carbamoyl group,

-NHCOR⁹ (where R⁹ is a C₁ to C₄ alkyl group that may be branched), and

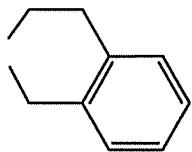
a halogen atom,

and n is an integer of 1 to 12.

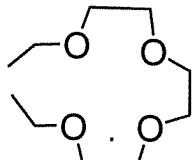
23. (Withdrawn) The method of claim 22, wherein R⁷ and R⁸ of the compound represented by the formula (I) are groups independently selected from the group consisting of a methyl group, an ethyl group, an n-butyl group, an isobutyl group, an n-decyl group, and a cyclohexyl group.

24. (Withdrawn) The method of claim 23, wherein R⁷ and R⁸ of the compound represented by the formula (I) are the same.

25. (Withdrawn) The method of claim 17, wherein R⁷ and R⁸ of the compound represented by the formula (I) are taken together to form a divalent group selected from the group consisting of: -(CH₂)_m- (where m is an integer from 2 to 8);



; and

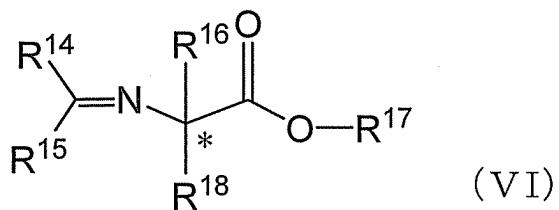


26. (Withdrawn) The method of claim 17, wherein the compound represented by the formula (I) is used in a ratio of 0.001 mol % to 0.1 mol % per 1 mol of the compound represented by the formula (IV).

27. (Withdrawn) The method of claim 17, wherein the compound represented by the formula (I) is used in a ratio of 0.005 mol % to 0.05 mol % per 1 mol of the compound represented by the formula (IV).

28. (Withdrawn) A method for producing an optically active α -amino acid, comprising: hydrolyzing an imino group (R¹⁴R¹⁵C=N-) and an ester group (-

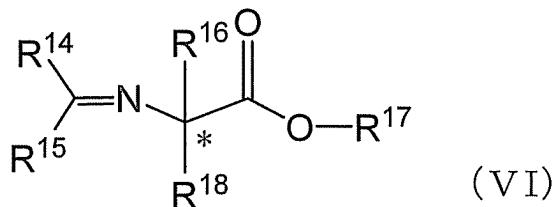
CO_2R^{17}) of the compound represented by the formula (VI) that is obtained by the method of any one of claims 17 to 26, under an acidic condition:



(where R^{14} , R^{15} , R^{16} , R^{17} and R^{18} are the same groups as defined above).

29. (Withdrawn) A method for producing an optically active α -amino acid, comprising:

hydrolyzing an imino group ($\text{R}^{14}\text{R}^{15}\text{C}=\text{N}-$) of the compound represented by the formula (VI) that is obtained by the method of any one of claims 17 to 26, under an acidic condition:

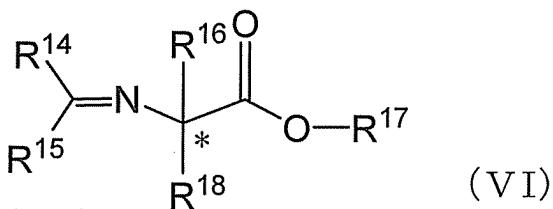


(where R^{14} , R^{15} , R^{16} , R^{17} and R^{18} are the same groups as defined above), and

hydrolyzing an ester group ($-\text{CO}_2\text{R}^{17}$) of the acid hydrolyzed product under an acidic or basic condition.

30. (Withdrawn) A method for producing an optically active α -amino acid, comprising:

hydrolyzing an ester group ($-\text{CO}_2\text{R}^{17}$) of the compound represented by the formula (VI) that is obtained by the method of any one of claims 17 to 26, under a basic condition:



(where R^{14} , R^{15} , R^{16} , R^{17} and R^{18} are the same groups as defined above), and

hydrolyzing an imino group ($R^{14}R^{15}C=N-$) of the basic hydrolyzed product under an acidic condition.